REMARKS

Claims 1, 6, 7, 15, 16, 20, 23 and 24 have been amended. No claims have been canceled or added. Hence, claims 1 - 30 are pending in the Application.

Summary of Office Action

Claims 1 – 30 are rejected under 35 USC 103(a) as being unpatentable over "Transaction Processing Concepts and Techniques", by Jim Grey and Andreus Reuter (1993), herein Grey, "Scalable Timers for Soft State Protocols", by Puneet Sharma, el al. (IEEE 1997), herein Sharma, in view of U.S. Patent No. 6,209,038, herein Bowen, and U.S. Patent No. 6,154,849, herein Xia.

As a preliminary, Applicant notes that in the heading of the Office Action summarizing the ground of the obviousness rejection of claims 1 – 30 as a whole, four references are cited. (See page 3, first full paragraph) However, in the detailed reasoning of the rejections for claims 1 and 15, as well as for other claims, the Office Action refers only to Grey and Sharma. Presumably, for claims 1 and 15, the only references serving as a ground for rejection are Grey and Sharma. Any portion of the Office Action summarizing the grounds of the obviousness rejection of claims 1, 15 and other claims should have cited only Grey and Sharma. The Office Action should have included separate summaries for claims rejected on another combination of the cited art. Nevertheless, Applicant has reviewed all the cited art for each claim traversed, as explained below.

Rejections based on Cited Art

Claims 1 and 16

generating latency information by monitoring latency of a network;

wherein generating said latency information includes generating a set of one or more transit times, wherein each of said set of one or more transit times reflects a period of time between when a message is transmitted over the network from a sender to a receiver and when the message is received;

generating one or more time period values based on said latency information;

determining whether to terminate distributed transactions based on said one or more time period values;

Claims 1 and 16 have been amended to clarify that the latency information generated by monitoring latency of a network includes a transit time for transmitting a message between a sender and receiver. Thus, claims 1 and 16 require using latency information, in the form of transit times between a sender and receiver, to adjust a time period value used to terminate distributed transactions.

"To establish a prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations". (MPEP 2143)

The cited references, alone or in combination, fail to teach or suggest using latency information that includes transit times between a sender and a receiver, as claimed, to adjust a time period value that is used to terminate distributed transactions. Neither Grey, Sharma, Bowen, or Xia, alone or in combination, disclose or suggest in any

way this feature. Therefore, these references fail to teach or suggest all the claim limitations.

The Office Action has alleged that Sharma teaches to gather latency information to adjust one or more time out values. Apparently this allegation is based on a correlation drawn between time out values taught by Sharma and the time period value claimed. Assuming the time out values in Sharma may be equated to a time period value claimed, Sharma nevertheless fails to disclose or teach in any way adjusting time period values based on latency information, where the latency information includes the transit times, as claimed.

So What does Sharma Teach

Sharma teaches an approach, referred to as scalable timers, for retaining state on the nodes of a network. "*State* in network nodes refers to information stored by networking protocols about the conditions of the network." (Sharma, section 2)

The nodes communicate the state to each other by sending control messages. Specifically, the "network nodes communicate with each other to exchange the information regarding change in the network conditions. Based on these control messages the network nodes modify their stored state. For instance, in the event of a change in network topology, the routers exchange messages resulting in modification of the multicast forwarding state if needed." "The *sender* is the network node that (re)generates control messages to install, keep alive, and remove state from the other node. The *receiver* is the node that creates, maintains and removes state, based on the control messages that it receives from the sender." (Sharma, section 2)

Timers are used to determine when state is stale and is discarded. "There are two timers …, one at the sender and one at the receiver. The sender maintains a *refresh timer*

that is used to clock out the refresh messages for the existing state. The receiver discards a state entry if it does not receive a refresh message for that state before the *state timeout timer* expires." (Section 3)

"The essential mechanisms required by scalable timers are twofold: (1) the *sender* dynamically adjusts the refresh rate, and (2) the *receiver* estimates the rate at which the sender is refreshing the state, in order to determine when state can be considered stale and deleted." (Section 4) "Receivers use the estimate of the refresh interval for discarding old state." (Section 5)

Scalable timer approaches does teach time period values as claimed

Sharma teaches several approaches for determining when state is stale and can be discarded, or, in other words, several approaches for timing out state. While at least one of these approaches teaches how a time value is determined and adjusted, none of these approaches teach adjusting time period values based on latency information, where the latency information includes a transit time, as claimed.

The first approach is referred as Counting of Rounds. This approach for timing out state is not based in any way on generating a time value in any form, including one in the form of a transit time between a sender and a receiver, as claimed.

The second approach is referred to as the Exponential Weighted Moving Average. "In this scheme a network node runs one EWMA estimator for each coincident link. Each EWMA estimator tracks the refresh interval average … and mean deviation … for the refreshes received on the associated link." "Once the average and mean deviation for the refresh interval are updated, the timeout value for the state is then set" . . .(Section 5.2).

The basis for determining and/or adjusting a time value under Exponential Weighted Moving Average is different than the basis for determining the time period

values, as claimed. Under Exponential Weighted Moving Average, the basis is the time interval between receipts of different messages from a sender. As claimed, the basis for the time period values is the transit time between when a message is sent and when received. A transit time between when a message is sent and received is different then the time between when different messages are received.

Cited passage does not teach adjusting time period values based on transit times

The specific passage cited by the Office Action as teaching to gather latency information to adjust one or more time out values is p.222, top of col. 2, which as quoted by the Office Action states "Scalable timers replace fixed settings ... with timers that adapt to the volume ... and available bandwidth." However, Sharma by teaching that timers that are adapted to volume and available bandwidth, does not teach that the timers are adapted based on transit times between a send and receiver.

By volume, Sharma refers to the "volume of control traffic." The Office Action omitted this from its quote. Sharma teaches the volume of control message increases when the amount of state increases; "control traffic grows ... with the increase in the amount of state in the network..." (Section 3) Sharma also teaches that bandwidth allocated to control message traffic is fixed. Thus, the number of control messages that can be sent in an interval of time is fixed because the available bandwidth is fixed. Because there are more items of state "competing" for a control message, a control message for a particular item of state is transmitted less frequently and the interval between messages for the particular item of state increases. As stated in Sharma, the "*scalable timers* approach fixes the **control traffic bandwidth** instead of the **refresh interval**. The control traffic is regulated by dynamically adjusting timer values to the

amount of state…." (Section 3.1) Nothing about adjusting timer values to the amount state in a network discloses or suggests in anyway generating time period values based on a transmit time between a sender and a receiver.

Please note that when Sharma states timer values are adjusted according to the amount of state, it is referring to the effect of scalable timers not to an actual implementation of the scalable timers. Implementations of adjusting timer values are the Count of Rounds and Exponential Weighted Moving Average approaches discussed above. As mentioned previously, nothing about these approaches discloses or suggests in anyway generating time period values based on a transmit time between a sender and a receiver.

Based on the foregoing, Claims 1 and 16 are patentable over the cited art. Reconsideration and allowance of claims 1 and 16 are respectfully requested.

Claim 15

Claims 15 and 20 recite "generating a set of one or more transit times, wherein each of said set of one or more transit times reflects a period of time between when a message is transmitted over the network from a sender to a receiver and when the message is received by the receiver", and "based on the one or more transit times, generating one or more time period values." Claims 15 and 20 thus require using transit times between a sender and a receiver to adjust a time period value that is used to terminate distributed transactions. For reasons similar to those discussed above with respect to claims 1 and 16, the cited fails to disclose or suggest in any of these features. Thus, claims 15 and 20 are patentable.

Claim 12

Claims 12 and 19 require "determining a set of one or more transaction execution periods for transactions executed by a participant that participates in a distributed transactions...", "if a difference between each of said set of one or more transaction execution periods and a transaction execution threshold period satisfies adjustment criteria, then adjusting said transaction execution threshold period...," "wherein said termination criteria is used for determining whether to terminate said distributed transaction...," and "wherein termination criteria is based on said transaction execution threshold period..." Thus, claims 12 and 19 require basing transaction termination criteria on a execution threshold period, and adjusting the execution threshold period based on one more transaction execution periods determined for a distributed transaction participant. The cited art does fails to disclose or suggest this feature. Further, the Examiner has made no attempt to show what in the cited art corresponds to these features or part of these features.

Based on the foregoing, claims 12 and 19 are patentable. Reconsideration and allowance of claims 12 and 19 is respectfully requested.

Pending Claims

The pending claims not discussed so far are dependant claims that depend on an independent claim that is discussed above. Because each of the dependant claims include the limitations of claims upon which they depend, the dependant claims are patentable for at least those reasons the claims upon which the dependant claims depend are patentable. Removal of the rejections with respect to the dependant claims and allowance of the dependant claims is respectfully requested. In addition, the dependent claims introduce additional limitations that independently render them patentable. Due to the fundamental

difference already identified, a separate discussion of those limitations is not included at this time.

For the reasons set forth above, Applicant respectfully submits that all pending claims are patentable over the art of record, including the art cited but not applied. Accordingly, allowance of all claims is hereby respectfully solicited.

The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

on Aug. 18, 2006 by Trudy Bagdon
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